

## CLAIMS

1. A data transmission method, the method comprising the steps of:  
 adding a sequence number, which represents a transmission sequence of  
 transmission data packets, to each of the transmission data packets to be transmitted,  
 5 via at least one transmitter unit before the transmission of data via a data transmission  
 link;  
 evaluating the respective sequence number of the transmission data packets via  
 at least one receiver unit after reception of the transmission data packets;  
 determining, in the receiver unit by comparing the sequence number of the  
 10 respectively received transmission data packet with the sequence numbers of  
 previously received transmission data packets, whether transmission data packets  
 which lie before the respectively received transmission data packet in the transmission  
 data sequence have not yet been received and processed; and  
 marking as temporarily missing, and making available for evaluation, the  
 15 transmission data packets which have not yet been received and processed.
2. A data transmission method as claimed in Claim 1, the method further  
 comprising the step of adding a sequence number, in a control data header, to each of  
 the transmission data packets to be transmitted, via the transmitter unit before the  
 20 transmission of data via the data transmission link.
3. A data transmission method as claimed in Claim 1, the method further  
 comprising the step of postponing processing of the received transmission data packets  
 until all transmission data packets which lie before the respectively received  
 25 transmission data packet in the transmission sequence have been one of received and  
 processed, and marked as definitely missing.
4. A data transmission method as claimed in Claim 3, wherein a  
 transmission data packet is marked as definitely missing if the sequence number  
 30 assigned to it exceeds a maximum difference with respect to the sequence number of  
 the transmission data packet which was received last and has not yet been marked as  
 one of temporarily and definitely missing before the reception.

5. A data transmission method as claimed in Claim 4, wherein a modulo calculation is used as a basis for the difference calculation.
- 5 6. A data transmission method as claimed in Claim 3, wherein a transmission data packet is marked as definitely missing if the transmission data packet which is respectively expected at the receiver unit has been marked as temporarily missing for a specific time.
- 10 7. A data transmission method as claimed in Claim 4, wherein parameters for the difference are transmitted to the receiver unit by a unit which is superordinate to the data transmission at a time which is one of before set up and during set up of the data transmission link.
- 15 8. A data transmission method as claimed in Claim 4, wherein parameters for the specific time are transmitted to the receiver unit by a unit which is superordinate to the data transmission at a time which is one of before set up and during set up of the data transmission link.
- 20 9. A data transmission method as claimed in Claim 1, wherein the transmission data packets are transmitted between at least one transmitter unit and at least one receiver unit in one of a GSM, a GPRS, an EDGE, and a UMTS radio communication system.
- 25 10. A radiocommunication system comprising at least one transmitter unit and at least one receiver unit, wherein a sequence number, which represents a transmission sequence of transmission data packets, is added to each of the transmission packets via the at least one transmitter unit before the transmission of data via a data transmission link, the respective sequence number of the transmission data packet is evaluated via the at least one receiver unit after reception of the data  
30 transmission packets, and wherein it is determined, in the at least one receiver unit, by comparing the sequence number of the respectively received transmission data packet

with the sequence numbers of previously received data transmission packets, whether transmission data packets which lie before the respectively received transmission data packet in the transmission data sequence have not yet been received and processed, and the transmission data packets which have not yet been received and processed are  
5 marked as temporarily missing and made available for evaluation.